

7th Grade Biomechanics – The Basics

Key Vocabulary

Tendon – strong, tough tissue that connects muscles to bones




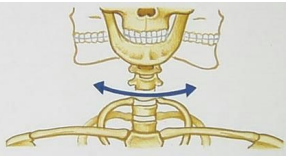
Flexion (Contraction) – when the muscle contracts, shortens, or pulls tight together

Extension – when a muscle relaxes and releases its tension

Flexor – the name for the muscle that pulls a joint closed

Extensor – the name for the muscle that pulls a joint open

The 4 Basic Joints

Hinge	Ball & Socket	Ellipsoidal	Pivot
Only open and close motion.	Widest range of motion.	All motion but rotation.	Only rotation motion.
			
Knee Joint	Shoulder Joint	Wrist Joint	Neck Joint

How it works!

When the body wants to open and close the elbow joint it starts with your brain sending a signal to your muscles. When that signal makes it to your bicep muscle, it pulls tight together and closes the elbow. Because the bicep closes the joint, it is called a **flexor**. The same process occurs when the arm opens, but this time the triceps **flexes** and the elbow joint opens. The triceps in this case are called the **extensor** muscle. When a joint moves it always has at least two sets of muscles making the motion because muscles can only pull, they can never push a joint open! Also, muscles are always attached to bones with **tendons** in two different locations. One location is above the joint. The other location is below the joint. For example, the bicep is connected at the humerus bone above the joint, and the radius bone below the joint.

